

# Lesson 3

## Understanding Technical Texts

### Learning Target

Understanding the order of steps to take to complete a process will help you understand what is important in technical texts you read.

- **Read** When you read **technical texts**, you learn important information about **procedures**. A procedure is a **sequence** of steps followed in order. Some technical texts describe procedures, or steps, and tell you why to follow them. Other times you must figure out why the steps are given in a certain order. As you read a technical text, keep in mind not just *what* it tells you to do but also the reason *why*.

At some point, you've probably followed directions for putting together a toy or making food. If so, you were using a technical text, or a text that explains how to do a task.

**Read the list below of the ingredients you need to make a recipe.**

## How to Make *Smashamole*

### What You Need

- 2 avocados
- 8 cherry tomatoes
- 1 tablespoon onion powder
- 1 tablespoon lime juice
- 2 plastic zipper-seal bags
- 1 unopened can of food



**Next, you must put everything together. What steps should you follow?**

► **Think** You've learned you need to follow steps in technical texts and figure out why. Below are the steps to make the Smashamole recipe, but they are out of order. First, read the steps and think about which step should be done first, second, and so on. Write that order in the column "Step Number." Then explain why you need to complete each step.

**Steps for Making Smashamole**

| <b>Step Number</b> | <b>What You Do</b>   | <b>Why You Do It</b>   |
|--------------------|--|--|
| Fourth             | Roll the can over the bags until the food is mashed and mixed.                                   |  |
|                    | Put the first bag into the second bag. Zip the second bag closed.                                | Using a second bag keeps the food safe in case rolling the can on it breaks the first bag. |
|                    | When everything is smashed, open the bags. Put the Smashamole in a bowl. Use as a dip for chips. |  |
|                    | Peel the avocados and remove the pits. Wash the cherry tomatoes.                                 |  |
| Second             | Put the first four ingredients on the list into a bag. Zip the bag. Squeeze out the air.         |  |

► **Talk** Share your *Sequence Chart* with a partner. Did you list the steps in the same order? Did you agree on why you had to follow certain steps? Why must the steps in recipes follow a certain order?



**Academic Talk**

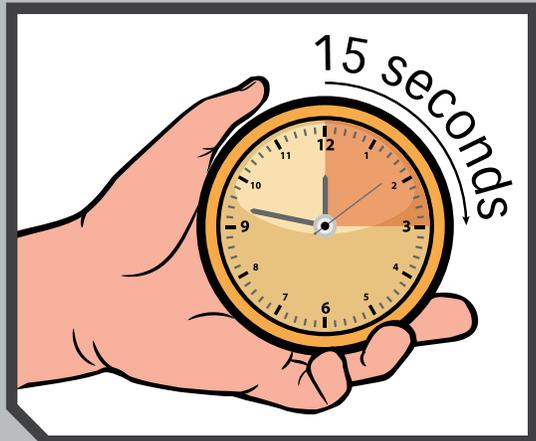
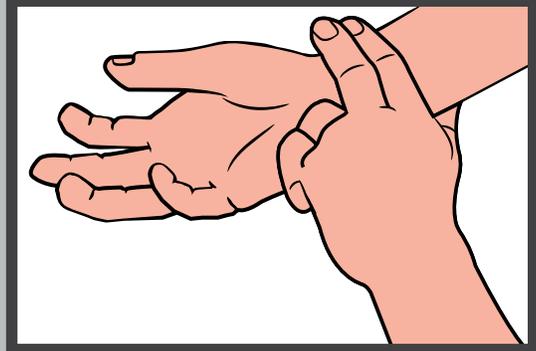
Use these words to talk about the text.

- **technical text**
- **procedures**
- **sequence**

# Finding Your Pulse Rate

by  
Maria Arroyo

- 1 Everyone has a pulse. As the heart pumps blood through our bodies, the pumping makes a rhythm you can measure. This rhythm is your pulse.
- 2 The **pulse rate** is a measure of the number of times the heart beats each minute. To find your pulse rate, follow these steps. First, place your index and middle fingers on the thumb side of your wrist, slightly below the base of your thumb joint. Then press gently until you feel the beat of your pulse.
- 3 After you find your pulse, use a watch to count the number of beats that occurs in 15 seconds. Then multiply this number by 4 to find the number of beats that occurs in one minute. Next, write the number on a piece of paper. The result is your pulse rate.
- 4 If you were not exercising just before taking your pulse, then this is your **resting pulse rate**. To find your **exercising pulse rate**, run in place for 60 seconds or do 10 jumping jacks. After that, check your pulse rate and record it on a piece of paper. Most likely, your resting and exercising rates will differ. What do you think causes this difference?
- 5 There are many reasons to find and check your pulse rate. Your pulse rate can tell a doctor how well your heart is working. It can also give important information about your overall health and fitness.



## Close Reader Habits

As you read, **circle** words, such as *then* and *after*, that show the order of steps in finding a pulse rate.

**Explore**

**How do the details about taking a pulse add to your understanding of why your pulse rate is important?**



Keep in mind what you must do for each step, and think about why you are doing it.

**Think**

- 1** Complete the Sequence Chart below by writing the first two steps you must follow to find your pulse rate. Then explain why you need to complete the steps in this order.

| Step Number | What You Do | Why You Do It |
|-------------|-------------|---------------|
| 1           |             |               |
| 2           |             |               |

**Talk**

- 2** Take turns finding your resting and exercising pulse rates. Then discuss what a pulse rate is and why the two rates are different.

 **Write**

- 3 Short Response** Explain why it's important to know how to find and check your pulse rate. Use the space provided on page 44 to write your response.

**HINT** Before you begin, **underline** two reasons in the text for checking your pulse rate.

# Making a Rhino Bank

by Matt Kincaid

- 1 Lots of people have piggy banks. Here's how to make something different—a rhino bank. You will need:
  - a round balloon
  - newspaper torn into strips
  - a large bowl of papier-mâché (PAY per meh SHAY) paste
  - cardboard tubes from paper towels or toilet paper
  - masking tape
- 2 **Part 1:** Blow up the balloon and tie a knot. Cut the cardboard tube into four short lengths and tape them to the balloon as “legs.” Roll some newspaper into the shape of a cone and tape it to the front of the balloon, as a horn. Make sure the form looks like a rhino (not a pig). This is, after all, a rhino bank.
- 3 **Part 2:** Dip one strip of newspaper into the papier-mâché paste. Use your fingers to squeeze extra paste back into the bowl. Then stick the pasted strip over the balloon and smooth it down. Continue dipping and placing strips, one at a time, until you have completely covered your creation. Do not use any more paste than is necessary. If there is too much paste, the strips will not lie flat and might not stick to each other.
- 4 **Part 3:** After 24 hours, the paste will be dry and the shape will harden. Have an adult cut a coin slot in the top with a knife. The balloon will pop. You can paint and decorate your rhino bank if you want. A rhino bank is much better than a piggy bank!



## Close Reader Habits

Why must you follow the steps in each part? Reread the text. **Underline** the details that tell *why* you must follow a step.

**Think** Use what you learned from reading the technical text to respond to the following questions.

**1** This question has two parts. Answer Part A. Then answer Part B.

**Part A**

Which statement **best** explains why you need to use a balloon?

- A** The balloon holds the rhino shape while the pasted pieces dry.
- B** The pasted newspaper will only stick to a balloon.
- C** The balloon makes the bank look like a rhino and not like a pig.
- D** The balloon will keep the newspaper strips from getting too much paste on them.

**Part B**

Underline **one** sentence from Part 3 that **best** supports your answer to Part A.

**Part 3:** After 24 hours, the paste will be dry and the shape will harden. Have an adult cut a coin slot in the top with a knife. The balloon will pop. You can paint and decorate your rhino bank if you want. A rhino bank is much better than a piggy bank!

**Talk**

**2** Explain why you need newspaper and papier-mâché and what you must do with them. Use the Sequence Chart on page 45 to organize your thoughts. Discuss why the steps in Part 2 are important to the whole process of making the rhino bank.

**Write**

**3 Short Response** Use the information in your Sequence Chart to explain the purpose of Part 2. Why is Part 2 important to the procedure? Use at least **two** details from the passage to support your response. Use the space provided on page 45 to write your response.



Read through all the directions to understand what you're making or doing. Then reread step by step and picture what to do at each step.

**HINT** Think about what the bank will look like at the end of Part 1.



**Write** Use the space below to write your answer to the question on page 41.

# Finding Your Pulse Rate

**3 Short Response** Explain why it's important to know how to find and check your pulse rate.

**HINT** Before you begin, **underline** two reasons in the text for checking your pulse rate.

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Don't forget to check your writing.

## Check Your Writing

- Did you read the prompt carefully?
- Did you put the prompt in your own words?
- Did you use the best evidence from the text to support your ideas?
- Are your ideas clearly organized?
- Did you write in clear and complete sentences?
- Did you check your spelling and punctuation?

# Making a Rhino Bank

**2** Use the Sequence Chart below to organize your ideas.

Steps for Making a Rhino Bank

| Step Number | What You Do | Why You Do It |
|-------------|-------------|---------------|
|             |             |               |



**Write** Use the space below to write your answer to the question on page 43.

**3 Short Response** Use the information in your Sequence Chart to explain the purpose of Part 2. Why is Part 2 important to the procedure? Use at least **two** details from the passage to support your response.

**HINT** Think about what the bank will look like at the end of Part 1.

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**WORDS TO KNOW**

As you read, look inside, around, and beyond these words to figure out what they mean.

- **dissolved**
- **particle**

# Floating or Sinking LIQUIDS

- 1 Many liquids mix easily with water. But some float on top of it. Others sink below it. That's because each liquid is different in many ways.
- 2 One difference is that each liquid has its own density. The more dense or "heavy" a liquid is, the more easily things will float on it. To find out about the density of liquids, you can make a tool called a hydrometer. Then use it to perform a fun experiment.

## MAKE THREE HYDROMETERS

**You will need:**



1 plastic drinking straw with stripes



scissors



1 small lump of clay, divided into 3 equal pieces



3 clear glasses or plastic cups of the same size



½ cup tap water



½ cup vegetable oil



½ cup maple syrup

**1**

Cut the drinking straw into three equal pieces.



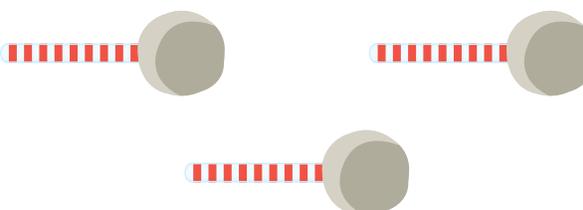
**2**

Form 3 small clay balls. Make them larger than the hole in the straw. Be sure the balls are equal in size.



**3**

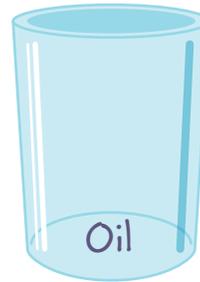
Insert one end of each straw into a ball of clay. Be sure to center the straws and push them into the clay to the same depth. The three hydrometers should look the same.



**TESTING FOR DENSITY**

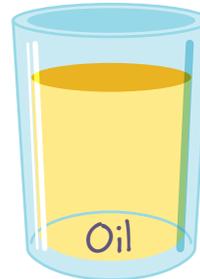
**4**

Label each cup. Write "Water," "Oil," or "Syrup" on the container.



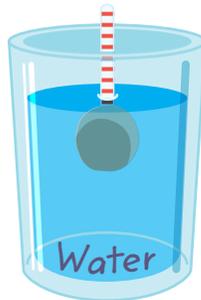
**5**

Fill each container with one liquid. Be sure the containers have equal amounts of the water, oil, and syrup.



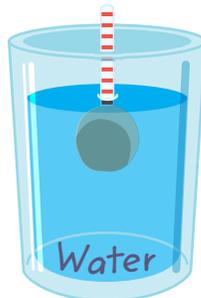
**6**

Carefully place a hydrometer into each liquid so it stands as straight up and down as possible. Also make sure no liquid gets into the straw.



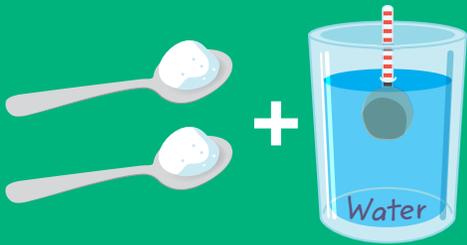
**7**

Observe what happens to each hydrometer. Compare the different levels at which the hydrometers float. You will see that the hydrometer in the oil sinks the lowest. The hydrometer in the syrup floats the highest.



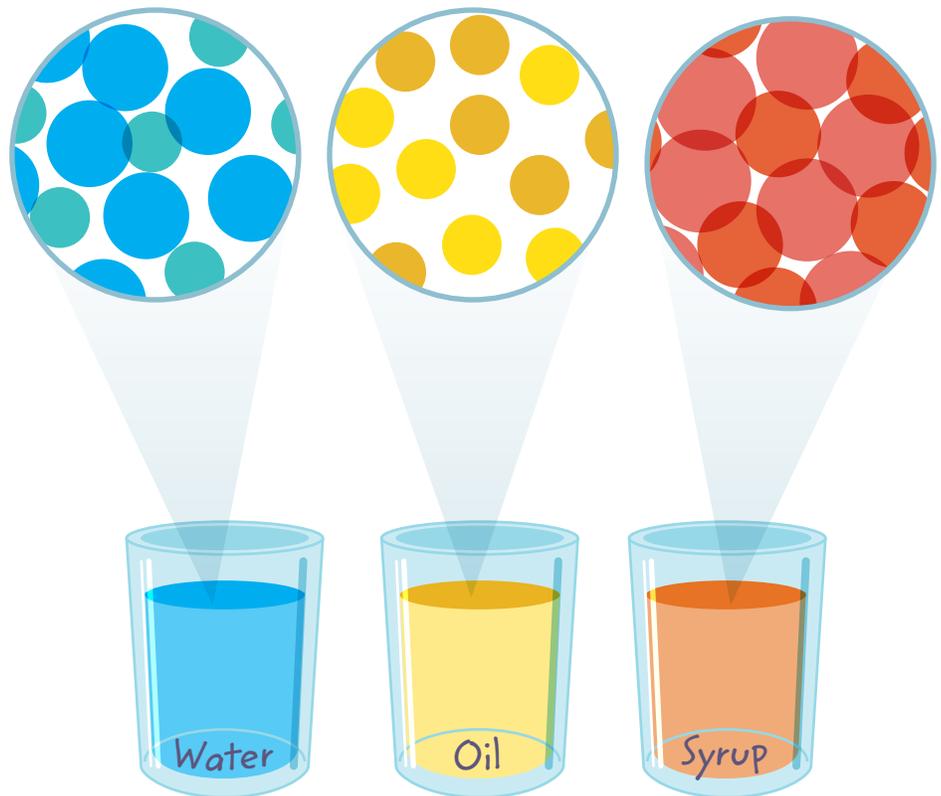
### Time to Think

Add 2 tablespoons of salt to the container of water. Stir until most of the salt is dissolved. You've packed more particles into the water, so now it's denser. What effect will this change have on the hydrometer?



### HOW DENSITY WORKS

- 3 Your hydrometers float at different levels because the water, oil, and syrup have different densities. The density of each liquid is determined by (1) the size and weight of its particles and (2) how closely its particles are packed together. The heavier and more closely packed the particles are, the more dense the liquid.
- 4 When a hydrometer is placed in a dense liquid, the packed, heavy particles will “push” harder on the hydrometer. As a result, the hydrometer floats higher than it would in a less dense liquid.
- 5 Weight plays a key part in density. For example, imagine one container filled with foam balls and one filled with metal balls of the same size. Both containers are packed with the same number and size of “particles.” But the one with metal balls would be much heavier, or more dense. Lift each container to see which one is heaviest. It will also have the densest materials.



**Think** Use what you learned from the experiment to respond to the following questions.

**1** What is the meaning of the word perform as it is used in paragraph 2?

- A** to do or carry out
- B** to entertain an audience
- C** to participate in a tradition
- D** to use a special skill

**2** This question has two parts. First, answer Part A. Then answer Part B.

**Part A**

How do the clay balls keep liquid from getting into the straw during Step 6?

- A** They cause the straws to sink.
- B** They help the straw stand up straight.
- C** They cover the hole at the bottom of the straw.
- D** They make the liquid denser.

**Part B**

What evidence from the text **best** supports the answer to Part A?

- A** "Form 3 small clay balls."
- B** "Make them larger than the hole in the straw."
- C** "Be sure the balls are equal in size."
- D** "Be sure to center the straws and push them into the clay to the same depth."

**3** Why is it important to make all the hydrometers the same?

- A** to keep them from sinking too low
- B** to get results that are accurate
- C** to show how different liquids move the clay balls
- D** to make it easier to handle the hydrometers

**4** What do the actions of the hydrometers in Step 7 help you understand about the density of the three liquids?

- A** Syrup is the densest liquid.
- B** Each liquid has the same density.
- C** Oil is denser than water or syrup.
- D** Water is the liquid that is least dense.

**5** The box below contains details from the experiment.

| What the Hydrometer Does   | Reason  |
|--|---|
| <ul style="list-style-type: none"> <li>• Sinks less than one but more than the other</li> <li>• Sinks the least</li> <li>• Sinks the most</li> </ul> | <ul style="list-style-type: none"> <li>• It has loosely packed particles.</li> <li>• It has tightly packed particles.</li> <li>• Its particles are packed tighter than one liquid but not as tight as the other.</li> </ul> |

Use details from the box above to fill in the “What the Hydrometer Does” and “Reason” columns in the table below.

|       | What the Hydrometer Does | Reason |
|-------|--------------------------|--------|
| Oil   |                          |        |
| Water |                          |        |
| Syrup |                          |        |

**Write**

- 6 Short Response** Explain why the hydrometers float at different levels on the water, oil, and syrup. Use details from the text to support your response.

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**Learning Target**

**In this lesson, you learned about the importance of steps and why you should follow them in order. Explain how this helps you better understand technical texts.**

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